

WHAT IS CLAIMED IS:

1. A method for establishing virtual private networks in a communication network, comprising the steps of:

5 creating a plurality of label switched path trunks, each of said label switched path trunks providing a class of services;

assigning a trunk label to each of said label switched path trunk, said trunk label identifying a class of services for said label switched path trunk; and

10 configuring a set of logical service networks via multiprotocol labels to carry multiple virtual private network paths using said label switched path trunks.

2. The method of claim 1, wherein said creating step includes the step of: creating said plurality of label switched path trunks at each service location.

15 3. The method of claim 1, wherein said configuring step includes the step of: statically configuring said logical service networks.

4. The method of claim 1, wherein said configuring step includes the step of: automatically configuring said logical service networks.

20 5. The method of claim 1, further comprising the step of: stacking said trunk label on a multi-protocol label switching stack.

6. The method of claim 5, further comprising the steps of:

25 assigning a unique identifier to a customer site; and stacking said unique identifier on said trunk label.

7. The method of claim 1, further comprising the step of: characterizing each of said logical service networks with parameters selected from the group comprising: traffic type, bandwidth, delay, hop count, guaranteed information rates, and restoration priorities.

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8. The method of claim 1, further comprising the steps of:
assigning a unique group identifier to customer sites for a customer; and
establishing at least one virtual path between said customer sites.

5 9. The method of claim 1, further comprising the step of:
propagating signals from node-to-node among said label switched path trunks.

10 10. The method of claim 1, further comprising the step of:
propagating signals from end-to-end among said logical service networks.

11. A virtual private network, comprising:
a plurality of label switched path trunks, each of said label switched path trunks providing a class of services;
a trunk label identifying a class of services for each of said label switched path trunks; and
a set of logical service networks configured via multiprotocol labels to carry multiple virtual private network paths via said label switched path trunks.

12. The virtual private network of claim 11, further comprising a plurality of label switched path trunks at each service location.

13. The virtual private network of claim 11, wherein said set of logical service networks is statically configured.

25 14. The virtual private network of claim 11, wherein said set of logical service networks is automatically configured.

15. The virtual private network of claim 11, wherein said trunk label is stacked on a multi-protocol label switching stack.

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16. The virtual private network of claim 15, further comprising a unique identifier assigned to a customer site, wherein said unique identifier is stacked on said trunk label.

17. The virtual private network of claim 11, wherein each of said logical service networks is characterized by parameters selected from the group comprising: traffic type, bandwidth, delay, hop count, guaranteed information rates, and restoration priorities.

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18. The virtual private network of claim 11, further comprising a unique group identifier associated with customer sites for a designated customer, said virtual private network using said unique group identifier to form at least one virtual path between said customer sites.

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19. The virtual private network of claim 11, wherein signals from said label switched path trunks are propagated from node to node among said label switched path trunks.

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20. The virtual private network of claim 11, wherein signals from said logical service networks are propagated from end to end among said logical service networks.